

INDION® 180

Description

INDION 180 resin is a macroporous strongly acidic cation exchanger developed for heterogeneous acid catalytic application.

INDION 180 is supplied in dry form as opaque, grey coloured spherical beads. A proper mix of high cross linking and porosity gives this product outstanding physical stability with high concentration of acid groups.

The unique structure of INDION 180 provides genuine porosity and a strong matrix together, with small volume change in different solutions and solvents. The large surface area leads to high catalytic activity. The functional groups throughout the entire structure are readily accessible to liquid or gaseous reactants thus ensuring efficient performance. The main applications are alkylation, esterification, etherification, condensation, hydrolysis and also for specialised applications such as MTBE.

Characteristics

Appearance	:	Opaque grey to dark grey beads
Matrix	:	Styrene divinylbenzene copolymer
Functional Group	:	Sulphonic acid
Ionic form as supplied	:	Hydrogen
Concentration of acid sites	:	5.0 meq/dry g, minimum
Moisture content	:	1.0 %, maximum
Particle size range	:	0.42 to 1.2 mm
> 1.2 mm	:	5.0%, maximum
< 0.42 mm	:	5.0%, maximum
Maximum operating temperature	:	130 °C
Operating pH range	:	0 to 7

Reuse of INDION 180

On completion of the catalytic reaction, the resin should be filtered off the products. The solvent as well as unreacted reactants associated with the resin should be washed off by rinsing with either solvent or one of the reactants. These washings can then be reused in subsequent batch processes. If water formation exists in the reaction after filtration, dry the resin. This can be carried out in an oven at about 90°C to 100°C for 6 to 10 hours to reduce moisture content to less than 5%.

Packing

HDPE carboys with inner
double plastic liner bags

25 / 50 kgs

Storage

Ion exchange resin catalysts are hygroscopic in nature. Therefore it is essential to store the dry INDION 180 in tightly packed containers, to prevent absorption of atmospheric moisture. In case moisture has been absorbed, it can be dried at 90°C - 100°C as mentioned above.

Safety

Acid and alkali solutions used for regeneration are corrosive and should be handled in a manner that will prevent eye and skin contact. If any oxidising agents are used, necessary safety precautions should be observed to avoid accidents and damage to the resin.

INDION range of ion exchange resins are produced in state-of-the-art ISO 9001 and ISO 14001 certified manufacturing facility at Ankleshwar, Gujarat.

To the best of our knowledge the information contained in this publication is accurate. Ion Exchange (India) Ltd. maintains a policy of continuous development and reserves the right to amend the information given herein without notice.

INDION is the registered trademark of Ion Exchange (India) Ltd.

ION EXCHANGE (INDIA) LTD.

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MATERIAL SAFETY DATA SHEET

Revision Date : 01/06/2011

1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY**Identification of the substance / preparation :**

Product Name **INDION 180**
Chemical Name Crosslinked Polystyrene with Sulphonic acid functionality
Ionic Form Hydrogen

Use of the substance/preparation

Main use Ion exchange / catalyst

Identification of the Company :

Company undertaking ION EXCHANGE (INDIA) LIMITED

Identification

Address Ion House,
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Description Concentration
Functionalised co-polymer > 99 % (Styrene/divinylbenzene)
Moisture content < 1 %

3. HAZARDS IDENTIFICATION

Contact with eyes Irritating to eyes (R36)
Contact with skin Mildly irritating to skin.
Ecological hazards May change the pH of receiving waters in case of major spillages.

4. FIRST AID MEASURES

Contact with skin

Remove contaminated clothing.

Contact with eyes

Remove particles and wash affected area with water.

Immediately wash out with plenty of water and remove all particles.

Ingestion

Seek medical attention if irritation persists.

Give 200 – 300 ml water to drink.

Never give anything by mouth to an unconscious person.

Inhalation

Seek immediate medical attention.

Remove patient to fresh air.

Seek medical advice.

5. FIRE- FIGHTING MEASURES

In case of fire, use foam, carbon dioxide or dry agent.

Substance evolves toxic fumes, wear self-contained breathing apparatus (see Section 10).

Wear full protective clothing including chemical protection suit.

Prevent run off water from entering drains if possible.

If polluted water reaches drainage systems or water courses, immediately inform appropriate authorities.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Keep people away.

Floor may be slippery, take care to avoid falls.

Environmental precautions

Do not allow to enter public sewers and water courses.

Clean up actions

Sweep-up and transfer to plastic containers for recovery or disposal, according to advice in section 13.

7. HANDLING AND STORAGE

Handling

The usual precautions for handling chemicals should be observed.

Risk of static discharge from dry beads.

Storage

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls

No special precautions are required for this product.

Occupational exposure controls

Respiratory protection

Not required for normal operation.

Hand protection	Wear suitable gloves.
Eye protection	Wear safety glasses or goggles. An eyewash facility should be available.
Skin protection	Wear chemical protective overalls.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance	Gray to dark gray coloured spherical beads
Physical state	Solid
Odour	No odour

Important information for human health, safety and environment

pH as supplied	Acidic in aqueous slurry
Boiling point	Not applicable
Flammability point	The preparation starts burning over 230° C only if ignited.
Flammability	The preparation is not flammable before the evaporation of moistening water
Explosive properties	None
Burning properties	None
Specific gravity	Not available
Solubility	In water : virtually insoluble In oil : insoluble
Partition coefficient n-octanol/water	Not applicable
Viscosity	Not applicable
Flash point	Not applicable
Melting point	Not applicable
Auto-ignition temperature	Over 500° C

10. STABILITY AND REACTIVITY

Conditions to avoid	This material is considered stable under normal conditions.
Materials to avoid	Incompatible with strong oxidizing agents. Contact with strong oxidizers, especially nitric acid, may produce low molecular weight organics that may form explosive mixtures.
Hazardous decomposition products	Combustion products may include monomers, residual organics, carbon and sulphur oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological Information

LD 50 (Oral, Rat) : Not applicable
 LD 50 (dermal, rabbit) : Not applicable
 LC50 (inhalation, rat) : Not applicable
 Irritation to eyes (rabbit) : Slightly Irritating
 Skin corrosion / irritation (rabbit) : No data available
 Ignition : No hazards anticipated if material has not
 exchanged hazardous substances.
 No evidence of carcinogenic effects.
 No evidence of teratogenic effects.
 No evidence of mutagenic effects.

Carcinogenicity

Teratogenicity

Mutagenicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

Information not available.

Mobility

Virtually insoluble in water.
 The product is not volatile.

Persistence and biodegradability

The product is not readily biodegradable

Risk of bioaccumulation

None

Other adverse effects

May change the pH of receiving waters in case of major
 spillages.

13. DISPOSAL CONSIDERATIONS

The product as delivered is a non-hazardous waste.

The used product may be subject to different
 classifications. In any case the product shall be disposed
 off, according to local, regional and national regulations.

EU number for exhausted or saturated ion exchange resins
 used for the preparation of drinking water or water for
 industrial use is 19 09 05.

EU number for exhausted or saturated ion exchange resins
 used in waste water treatment plants not otherwise
 specialized is 19 08 06.

14. TRANSPORT INFORMATION

Ion exchange resins as supplied are not classified as
 hazardous for transport.

Classification for ROAD and RAIL transport: Not regulated
 (Not dangerous for transport)

Classification for SEA transport: Not regulated

(Not dangerous for transport)

Classification for AIR transport: Not regulated
(Not dangerous for transport)

15. REGULATORY INFORMATION

Risk phrases

The product as supplied is non hazardous.

R 36 : Irritating to eyes.

S 26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 39 : Wear eye/face protection

16. OTHER INFORMATION

Note :

Industrial grade products are not intended for analytical, food, medical and pharmaceutical applications without preliminary extensive purification.

Whilst every effort has been made to be as accurate as possible, Ion Exchange (India) Limited provides no warranty with respect to this information and disclaims all liability associated with its use.